

JULY 15-19, 2024

Seville brings together more than 1,300 experts for the 9th European Congress of Mathematics



Juan González-Meneses, president of 9ECM

- **Organized by the European Mathematical Society (EMS), the European Congress of Mathematics is held every four years and is considered the second most important event in mathematics in the world. At the opening ceremony, the prestigious EMS Prizes will be awarded.**
- **This edition is organized by the University of Seville, with the collaboration of many other Spanish institutions and mathematical societies.**

- **During the congress, the latest advances in fundamental and applied mathematics will be presented. Artificial Intelligence, education, Big Data and open science, among other topics, will be discussed.**

Seville, June 24, 2024. The European Congress of Mathematics (ECM), considered the second most important in the world in this discipline and taking place every four years in a European city, will be held in its ninth edition in Seville (Spain), between July 15 and 19, with more than 1,300 participants.

The Congress is celebrated under the auspices of the **European Mathematical Society (EMS)** and has landed in Seville thanks to the candidacy presented by the **University of Seville (US)**. The chair of the Organizing Committee, Professor Juan González-Meneses, defended the Seville project, which was finally chosen in 2020 over a powerful candidacy presented by Lisbon. The 9ECM Seville 2024 counts with the organizational experience of the Institute of Mathematics of the University of Seville (IMUS) and the Institute of Mathematics of the University of Granada (IEMATH-GR), both of which form the core of the Andalusian Institute of Mathematics (IAMAT). In addition, the event is part of the Cajal Year organized by the Spanish Ministry of Science and Innovation.

The scientific event congregates some of the main leaders of European mathematics, and serves as meeting point for numerous researchers, who will present and discuss the latest advances in their respective areas. The program includes **12 plenary lectures, 32 invited lectures, 640 mini-symposia talks, and 270 contributed communications in thematic sessions**, as well as round tables, outreach conferences, activities for young researchers and a cultural program, including **four exhibitions** having mathematics as their backdrop. And, doubtless, the most eagerly awaited moment will be the announcement of the winners of the **European Mathematical Society Prizes**, a total of 14 on this occasion. These are the most important awards for young mathematicians in Europe, and the second in the world after the prestigious Fields Medals.

Although the main event is based in Seville, more concretely in the site of the Technical School of Engineering (ETSI), **satellite events will be held all throughout Spain and Portugal**. Just before the congress, on the 13th and 14th of July, the European Mathematical Society (EMS) Council Meeting will be celebrated in Granada.

Mathematics to study tumors and design the machines of the future.

The selection of mathematicians being invited to lecture at the congress gathers the most prestigious in the world, for instance the Fields Medal winner **Maxim Kontsevich**. The variety of topics that will be presented, both in fundamental and applied research, show, in the words of González-Meneses, "that the mathematics being developed today will change the life of tomorrow".

Among the most anticipated speakers is **Avi Wigderson**, professor at the Institute for Advanced Study in Princeton, an expert in computer science, algorithms, cryptography and quantum computing, who will deliver the special 'Abel Lecture'.

Fabio Toninelli, from the Technical University of Vienna, who in recent work has studied the KPZ equation (after Kardar, Parisi and Zhang), which models universal features of growth and aggregation processes, such as those of a tumor, a city, or the way in which a crystal forms by capturing atoms from its surroundings.

Annalisa Buffa, professor at the Ecole Polytechnique Federale de Lausanne, an expert in numerical analysis who, thanks to the use of subtle mathematical techniques, has made outstanding advances in the development of computer simulations with applications to industry and machine design.

Also speaking will be **Etienne Ghys**, mathematician and professor at the École Normale Supérieure de Lyon, and emeritus director of research at the French National Centre for Scientific Research (CNRS), whose work ranges from key achievements in geometry and chaos theory to the outreach of the mathematics involved in the design of footballs or in the formation of snowflakes.

In a series of outreach conferences, open to the public, topics such as the quest for a neuroprotective therapy in Parkinson's disease, crucial moments in the history of mathematics, the technological challenges of nuclear fusion by magnetic confinement, and the alterations caused by invasive species will be discussed.

Andalusia and Seville, at the top international level.

The University of Seville and, more generally, the public universities of Andalusia, produce first-rate research in Mathematics at the international level, as all research rankings show. The organizers hope that the celebration of this congress in the US will consolidate the international recognition of the research being developed in the institution, and at the same time will bring this research even closer to society, at a time where citizens are increasingly aware of the significant role that Mathematics plays in their lives and in their well-being. In general, Spanish mathematics occupies an important place in the European scene and, worldwide, Spain is amongst the top ten countries with highest mathematical production.

Furthermore, 100 mathematics students from several Spanish universities will collaborate as volunteers in the event, and a total of 120 scholarships have been awarded as part of the international cooperation program for young mathematicians and for participants from developing countries. "The 9ECM is committed to giving the opportunity of attending the congress to mathematicians who do not have sufficient resources to do so," says Mirta M. Castro Smirnova, from the University of Seville.

A cultural program with mathematical perspective

As part of the cultural events associated with the 9ECM, **four exhibitions** will be displayed. One of them is "**Maps. Cartographic heritage in Seville from the fifteenth to the eighteenth centuries**", which will be located at the Cajasol Foundation in Seville: it consists of a curated collection of maps and books from a period going from the late Middle Ages and early Renaissance to the Enlightenment, provided by the Archive of the Indies, the Biblioteca Colombina and the University of Seville.

The other three will be on display at the main venue, the Technical School of Engineering of Seville: "***A Geometric Walk Through the Alhambra***", which elucidates some of the mathematical secrets within the Alhambra in Granada; "***Women in Mathematics From Around the World. A gallery of portraits***", which presents 34 extensive profiles of women mathematicians from all over the world, through photographs, texts and videos; and "***Knots***", aimed at the general public, which has ten three-dimensional models of mathematical knots specially curated for their distinctive features, symmetries and beauty, which will guide the visitor through the mesmerizing world of Knot Theory.

MORE INFORMATION:

9ECM website: <https://ecm2024sevilla.com> and program: <https://acortar.link/qgaazz>



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